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EXAMINER

MICHALSKI, JUSTIN I

ART UNIT

PAPER NUMBER

2644

DATE MAILED: 11/19/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/057,903

Applicant(s)

WILCOCK, LAWRENCE

Examiner

Justin Michalski

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1-29-2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 and 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority based on applications filed in United Kingdom on 01/29/2001 and 11/20/2001. It is noted, however, that applicant has not filed certified copies of the 0102230.0 and 0127779.7 applications as required by 35 U.S.C. 119(b).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5 and 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Schmandt ("Audio Hallway: a virtual Acoustic Environment for Browsing," 1998, UIST, San Francisco, CA).

Regarding Claim 1, Schmandt discloses an audio user-interface method in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate (Schmandt discloses rooms with files (i.e. sources) arrayed in front of the users head where up to four files play simultaneously based on the angle of rotation of the head) (Figure 5 and Page 167, Column 2, paragraph 2), the method including the steps of: allocating the sound

sources to groups of at least one sound source (Schmandt discloses 6 to 20 files in a room) (Page 167, Column 2, paragraph 2); and automatically and cyclically changing the audibility of the sound sources such as to un-mute the sound sources of each group in turn for a limited period with the sound sources of the groups other than the un-muted group being at least partially muted (Schmandt discloses a virtual acoustic environment for browsing including a group of sound sources ordered about the user's head (Figure 5) where user can scan the sounds by rotating the head listening up to four sounds simultaneously and bringing a single sound into focus (i.e. un-muted) while the other sources have less amplitude (i.e. partially-muted) (Figure 6; Page 167, paragraph 3 through page 168, paragraph 1).

Regarding Claim 2, Schmandt further discloses logically grouping a cluster of audio files (i.e. sound sources) (Page 164, column 2, paragraph 3).

Regarding Claim 3, Schmandt further discloses grouping the sound sources in virtual rooms (i.e. positions) in the audio field (Page 167, Column 2, paragraph 2).

Regarding Claim 4, Schmandt further discloses up to four files (i.e. sources) play simultaneously based on the angle of rotation of the head in the ground plane (i.e. user groups sources by rotation of the head) (Page 167, column 2, paragraph 2).

Regarding Claim 5, Schmandt further discloses that 6 to 20 individual files (i.e. sound source) are placed each room (i.e. it's own group) (Page 167, column 2, paragraph 2).

Regarding Claim 7, Schmandt further discloses fading in and out of neighboring sounds with head rotation (i.e. user's head rotation controls the period of time source is heard in playback) (Page 167, paragraph 2).

Regarding Claim 8, Schmandt further discloses fading in and out of neighboring sounds with head rotation (i.e. cross fading) helps convey the spatial model of an ordered array of sounds (Page 167, paragraph 2).

Regarding Claim 9, Schmandt further disclose a method wherein each group is associated with a respective audio-field reference relative to which the sound sources of the group are positioned (Schmandt discloses Figure 5 with sound files (i.e. groups) situated in a plane parallel to the ground around the head), the audio-field references being independently movable relative to a presentation reference (user's head) which is determined by a mounting configuration of audio output devices used to synthesize said sound sources (Schmandt discloses position sensor on headphones (Page 169, paragraph 1) which can rotate sounds by rotation of the head (Page 167, Column 2, paragraph 2)).

Regarding Claim 10, Schmandt further discloses the system containing a position sensor mounted on headphones (Page 169, Column 1, paragraph 1) allowing the user to navigate by changing head position and therefore world stabilized.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 1 above, and further in view of Scofield et al. (US Patent 6,144,747). Schmandt discloses a method as stated above apropos of claim 1 but does not disclose one group of sound sources left un-muted. Schofield discloses a system (Figure 8) including sources 58 and 60 being controlled (i.e. muted) by mixer 120. Source 52 is treated as an exception and is not adjusted by mixer 120. Schofield discloses that speaker 52 outputs frequencies below 250Hz and there being no left or right distinctions made (Column 6, lines 37-41). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a speaker left un-muted since distinctions cannot be made between left and right at low frequencies.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 1 above in view of McKiel, Jr. (US Patent 6,046,722). Schmandt as modified discloses an apparatus as stated apropos of claim 1 above. Schmandt does not disclose the sound sources are audio labels and selection means. McKiel, Jr. discloses a method for selection a graphic element (i.e. label) displayed on a computer screen which is identifiable by audio signals to help blind or visually impaired users to select the objects (Column 3, lines 28-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include

audio-labels to help visually impaired users select an object based on sound rather than on sight.

7. Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuo (US Patent 5,964,400) in view of Schmandt ("Audio Hallway: a virtual Acoustic Environment for Browsing," 1998, UIST, San Francisco, CA).

Regarding Claim 12, Matsuo discloses an apparatus for providing an audio user interface (Matsuo discloses providing user with three-dimensional sound (i.e. user interface) (Column 1, lines 6-11) in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate (Matsuo discloses sound image (i.e. sound source, Figure 15) through headphones will sound to the listener as if it were placed at same location as sound source) (Column 1, lines 64-67), the apparatus comprising: storage means for storing data concerning the sound sources (memory means 2), this data including grouping data associated sound sources in groups of at least one sound source; rendering-position determining means for determining, for each said sound source, an associated rendering position at which the sound source is to be synthesized to sound in the audio field (references 4, 7, 2, and 3); rendering means, including audio output devices, for generating an audio field in which said sound sources are synthesized at their associated rendering positions and with audibility as determined by said audibility-determining means (Figure 1, reference 3 and Figure 2, reference 15). Matsuo does not disclose an audibility-determining means to automatically and cyclically change the

audibility of the sound sources. Schmandt discloses a virtual acoustic environment for browsing including a group of sound sources ordered about the user's head (Figure 5). Schmandt further discloses the user can scan the sounds by rotating the head listening up to four sounds simultaneously and bringing a single sound into focus (i.e. un-muted) while the other sources have less amplitude (i.e. partially-muted) (Figure 6; Page 167, paragraph 3 through page 168, paragraph 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to un-mute and partially mute sound sources in order to bring a single sound into focus for clearer comprehension.

Regarding Claim 13, Schmandt further discloses logically grouping a cluster of audio files (i.e. sound sources) (Page 164, column 2, paragraph 3).

Regarding Claim 14, Schmandt further discloses grouping the sound sources in virtual rooms (i.e. positions) in the audio field (Page 167, Column 2, paragraph 2).

Regarding Claim 15, Schmandt further discloses up to four files (i.e. sources) play simultaneously based on the angle of rotation of the head in the ground plane (i.e. user can allocate sound sources to groups) (Page 167, column 2, paragraph 2).

Regarding Claim 16, Matsuo further discloses only sound image 109 (Figure 15) (i.e. acting as its own group).

Regarding Claim 17, Schmandt further discloses fading in and out of neighboring sounds wit head rotation (i.e. user's head rotation controls the period of time source is heard in playback) (Page 167, paragraph 2).



Regarding Claim 18, Schmandt further discloses fading in and out of neighboring sounds with head rotation (i.e. cross fading) helps convey the spatial model of an ordered array of sounds (Page 167, paragraph 2).

Regarding Claim 19, Matsuo further discloses rendering-position means comprising: means for setting the location of each said sound source (Figure 15, image 109) relative to an audio-field reference (headphones 107); means for controlling an offset between the audio field reference (Figure 13, listener 35) and a presentation reference (speakers 33 and 34), the presentation reference being determined by a mounting configuration of the audio output devices (location of speakers 33 and 34); and means for deriving the rendering position of each sound source based on the location of the sound source in the audio field and said offset (Filter 36) (Column 16, lines 19-25).

Regarding Claim 20, Schmandt further discloses the system containing a position sensor mounted on headphones (Page 169, Column 1, paragraph 1) allowing the user to navigate by changing head position and therefore world stabilized.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuo as modified as applied to claim 12 above, and further in view of McKiel, Jr. (US Patent 6,046,722). Matsuo as modified discloses an apparatus as stated apropos of claim 12 above. Matsuo as modified does not disclose the sound sources are audio labels and selection means. McKiel, Jr. discloses a method for selection a graphic element (i.e. label) displayed on a computer screen which is identifiable by audio signals to help blind

or visually impaired users to select the objects (Column 3, lines 28-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include audio-labels to help visually impaired users select an object based on sound rather than on sight.

9. Claims 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuo (US Patent 5,964,400) in view of Schmandt ("Audio Hallway: a virtual Acoustic Environment for Browsing," 1998, UIST, San Francisco, CA).

Regarding Claim 22, Matsuo discloses an apparatus for providing an audio user interface (Matsuo discloses providing user with three-dimensional sound (i.e. user interface) (Column 1, lines 6-11) in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate (Matsuo discloses sound image (i.e. sound source, Figure 15) through headphones will sound to the listener as if it were placed at same location as sound source) (Column 1, lines 64-67), the apparatus comprising: a data store for storing data concerning the sound sources (Figure 1, memory 2), this data including grouping data associating sound sources in groups of at least one sound source; a rendering-position determining arrangement operative to determine, for each said sound source, an associated rendering position at which the sound source is to be synthesized to sound in the audio field (sound image positioning filter 3 and distance calculator 4); a rendering subsystem, including audio output devices, arranged to generate an audio field in which said sound sources are synthesized at their associated rendering

positions and with audibility as determined by said audibility-determining arrangement(Figure 2 speakers 15). Matsuo does not disclose audibility-determining means for automatically and cyclically changing the audibility of sound sources. Schmandt discloses a virtual acoustic environment for browsing including a group of sound sources ordered about the user's head (Figure 5). Schmandt further discloses the user can scan the sounds by rotating the head listening up to four sounds simultaneously and bringing a single sound into focus (i.e. un-muted) while the other sources have less amplitude (i.e. partially-muted) (Figure 6; Page 167, paragraph 3 through page 168, paragraph 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to un-mute and partially mute sound sources in order to bring a single sound into focus for clearer comprehension.

Regarding Claim 23, Schmandt further discloses logically grouping a cluster of audio files (i.e. sound sources) (Page 164, column 2, paragraph 3).

Regarding Claim 24, Schmandt further discloses grouping the sound sources in virtual rooms (i.e. positions) in the audio field (Page 167, Column 2, paragraph 2).

Regarding Claim 25, Schmandt further discloses up to four files (i.e. sources) play simultaneously based on the angle of rotation of the head in the ground plane (i.e. user can allocate sound sources to groups) (Page 167, column 2, paragraph 2).

Regarding Claim 26, Matsuo further discloses only sound image 109 (Figure 15) (i.e. acting as its own group).

Regarding Claim 27, Schmandt further discloses fading in and out of neighboring sounds with head rotation (i.e. user's head rotation controls the period of time source is heard in playback) (Page 167, paragraph 2).

Regarding Claim 28, Schmandt further discloses fading in and out of neighboring sounds with head rotation (i.e. cross fading) helps convey the spatial model of an ordered array of sounds (Page 167, paragraph 2).

Regarding Claim 29, Matsuo further discloses rendering-position determining arrangement comprising: a setting arrangement for setting the location of each said sound source (Figure 15, image 109) relative to an audio-field reference (headphones 107); a control arrangement for controlling an offset between the audio field reference and a presentation reference (Figure 13, speakers 33 and 34), the presentation reference being determined by mounting configuration of the audio output devices (location of speakers 33 and 34); and a deriving arrangement operative to derive the rendering position of each sound source based on the location of the sound source in the audio field and said offset (Filter 36)(Column 16, lines 19-25).

Regarding Claim 30, Schmandt further discloses the system containing a position sensor mounted on headphones (Page 169, Column 1, paragraph 1) allowing the user to navigate by changing head position and therefore world stabilized.

10. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuo as modified as applied to claim 22 above, and further in view of McKiel, Jr. (US Patent 6,046,722). Matsuo as modified discloses an apparatus as stated apropos of claim 12

above. Matsuo as modified does not disclose the sound sources are audio labels and selection means. McKiel, Jr. discloses a method for selection a graphic element (i.e. label) displayed on a computer screen which is identifiable by audio signals to help blind or visually impaired users to select the objects (Column 3, lines 28-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include audio-labels to help visually impaired users select an object based on sound rather than on sight.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

JIM

  
**XU MEI**  
**PRIMARY EXAMINER**